IN THE CLAIMS

This listing of the claim will replace all prior versions and listings of claim in the present application.

Listing of Claims

1.   (original)   A storage device comprising:

at least one storage for storing data to be accessed by at least one computer;

an access processing module that controls data access between the at least one storage and the at least one computer;

a management interface that receives from a management computer a storage region allocation request to allocate a storage region to the at least one computer;

a storage region allocation module that allocates to the at least one computer, according to the storage region allocation request, an unallocated storage region in the at least one storage in a manner accessible by the at least one computer; and

a performance allocation module that allocates to the at least one computer, according to the storage region allocation request, performance of at least one target module that affects data access between the at least one computer and the storage region allocated.

2.   (original)   A storage device according to claim 1, wherein the at least one target module includes an interface that connects to the at least one computer, and the performance allocation module is a band control module for controlling band performance in the interface.

3.　　(original)　　A storage device according to claim 1, further comprising a cache that temporarily stores data to be moved between the storage and the at least one computer, wherein the performance allocation module is a cache allocation control module that controls, according to the storage region allocation request, an allocation am0unt of the cache that affects data access between the at least one computer and the storage region allocated.

4.　　(original)　　A storage device according to claim 1, further comprising a storage region management module that sets, according to an allocation release request from the management computer to release the storage region allocated, the storage region allocated to an un allocated storage region, wherein the performance allocation module releases, according to the allocation release request, performance guarantee that is set to the at least one target module.

5.　　(original)　　A storage device according to claim 1, wherein the performance allocation module controls, according to the storage region allocation request and at least one actual performance value of the at least one target module, the at least one target module to allocate to the at least one computer performance that affects data access between the at least one computer and the storage region allocated.

6.　　(original)　　A storage device according to claim 1, wherein the storage region allocation request includes a policy concerning at least one of an

access band width, a randomness of accesses and an access response time for the storage region that is a target of the storage region allocation request, and the performance allocation module allocates to the at least one computer performance of the at least one target module that affects data access between the at least one computer and the storage region allocated based on at least one performance parameter that is obtained by converting the storage region allocation request based on the policy for the storage region that is a target of the storage region allocation request.

7.   (original)   A storage device according to claim 1, further comprising a plurality of disk drives that manage a plurality of storage regions, wherein the storage region allocation request includes a policy concerning a randomness of accesses for the storage region that is a target of the storage region allocation request, and the storage region allocation module specifies at least one of the plurality of disk drives to allocate the unallocated storage region according to the policy concerning the randomness of accesses included in the storage region allocation request and random access performance information of parts of the plurality of storage regions that are already allocated to the disk drives.

8.   (original)   A storage device according to claim 1, further comprising a plurality of disk drives that manage a plurality of storage regions, wherein the storage region allocation request includes a policy concerning a randomness of accesses and an access band width for the storage region that is a target of the

storage region allocation request, and the storage region allocation module specifies at least one of the plurality of disk drives to allocate the unallocated storage region according to the policy concerning the randomness of accesses and the access band width included in the storage region allocation request and random access performance information and an access band width of parts of the plurality of storage regions that are already allocated to the disk drives.

9.   (original)   A storage device according to claim 1, further comprising a plurality of disk drives that manage a plurality of storage regions, wherein the storage region allocation request includes a policy concerning a randomness of accesses for the storage region that is a target of the storage region allocation request, and the storage region allocation module specifies an interface that connects to the co1nputer to which the unallocated storage region is allocated, according to the policy concerning the randomness of accesses included in the storage region allocation request and random access performance of parts of the plurality of storage regions that are already allocated to the disk drives.

10.   (original)   A storage device according to claim 1, further comprising a plurality of disk drives that manage a plurality of storage regions, wherein the storage region allocation request includes a policy concerning a randomness of accesses and an access band width for the storage region that is a target of the storage region allocation request, and the storage region allocation module specifies an interface to be connected to the computer to which the unallocated storage region

is allocated, according to the policy concerning the randomness of accesses and the access band width included in the storage region allocation request and random access performance and an access band width of parts of the plurality of storage regions that are already allocated to the disk drives.

11.   (original)   A storage device comprising:

at least one storage for storing data to be accessed by at least one computer;

an access processing module that controls data access between the at least one storage and the at least one computer;

a management interface the receives from a management computer a storage region allocation request to allocate a storage region to the at least one computer;

a storage region allocation module that allocates according to the storage region allocation request an unallocated storage region in the at least one storage to the at least one computer in a manner accessible by the at least one computer;

a performance setting module that instructs an external information processing device to allocate to the at least one computer, according to the storage region allocation request, performance that affects data access between the at least one computer and the storage region allocated.

12.   (original)   A storage device according to claim 11, wherein the at least one target module includes an interface that connects to the at least one computer, and the performance allocation module is a band control module for controlling band performance in the interface.

13. (original)   A storage device according to claim 11, further comprising a cache that temporarily stores data moved between the storage and the at least one computer, wherein the performance allocation module is a cache allocation control module that controls, according to the storage region allocation request, an allocation amount of the cache that affects data access between the at least one computer and the storage region allocated.

14. (original)   A storage device according to claim 11, further comprising a storage region management module that sets, according to an allocation release request from the management computer to release the storage region allocated, the storage region allocated to an unallocated storage region, wherein the performance allocation module releases, according to the allocation release request, performance guarantee that is set to the at least one target module.

15. (original)   A storage device according to claim 11, wherein the performance allocation module controls, according to the storage region allocation request and at least one actual performance value of the at least one target module, the at least one target module to allocate to the at least one computer performance that affects data access between the at least one computer and the storage region allocated.

16.   (original)   A storage device according to claim 11, wherein the storage region allocation request includes a policy concerning at least one of an access band width, a randomness of accesses and an access response time for the storage region that is a target of the storage region allocation request, and the performance allocation module allocates to the at least one computer performance of the at least one target module that affects data access between the at least one computer and the storage region allocated based on at least one performance parameter that is obtained by converting the storage region allocation request based on the policy for the storage region that is a target of the storage region allocation request.

17.   (original)   A storage device according to claim 11, further comprising a plurality of disk drives that manage a plurality of storage regions, wherein the storage region allocation request includes a policy concerning a randomness of accesses included in the storage region allocation request and random access performance information of parts of the plurality of storage regions that are already allocated to the disk drive.

18.   (original)   A storage device according to claim 11, further comprising a plurality of disk drives that manage a plurality of storage regions, wherein the storage region allocation request includes a policy concerning a randomness of accesses and an access band width for the storage region that is a target of the storage region allocation request, and the storage region allocate the

unallocated storage region according to the policy concerning the allocation module specifies at least one of the plurality of disk drives to randomness of accesses and the access band width included in the storage region allocation request and rand9m access performance information and an access band width of parts of the plurality of storage regions that are already allocated to the disk drives.

19.   (original)   A storage device according to claim 11, further comprising a plurality of disk drives that manage a plurality of storage regions, wherein the storage region allocation request includes a policy concerning a randomness of accesses for the storage region that is a target of the storage region allocation request, and the storage region allocation module specifies an interface that connects to the computer to which the unallocated storage region is allocated, according to the policy concerning the randomness of accesses included in the storage region allocation request and random access performance of parts of the plurality of storage regions that are already allocated to the disk drives.

20.   (original)   A storage device according to claim 11, further comprising a plurality of disk drives that manage a plurality of storage regions, wherein the storage region allocation request includes a policy concerning a randomness of accesses and an access band width for the storage region that is a target of the storage region allocation request, and the storage region allocation module specifies an interface to be connected to the computer to which the unallocated storage region is allocated, according to the policy concerning the

randomness of accesses and the access band width included in the storage region allocation request and random access performance and an access band width of parts of the plurality of storage regions that are already allocated to the disk drives.

21.   (currently amended)A performance guarantee method for a storage device including at least one storage for storing data to be accessed by at least one computer, and an access processing module that controls data access between the at least one storage and the at least one computer, the performance allocation method comprising the steps of:

receiving from a management computer a storage region allocation request to allocate a storage region to the at least one computer;

allocating to the at least one computer, according to the storage region allocation request, an unallocated storage region in the at least one storage in a manner accessible by the at least one computer; and

allocating to the at least one computer, according to the storage region allocation request, performance of at least one target module in the storage that affects data access between the at least one computer and the storage region allocated.

22.   (original)   A management method for a management computer that connects to a storage device including at least one storage for storing data to be accessed by at least one computer and an access processing module that controls

data access between the at least one storage and the at least one computer, the management method comprising the steps of:

receiving a storage region allocation request to allocate a storage region to the at least one computer;

instructing the storage device to allocate to the at least one computer, according to the storage region allocation request, an unallocated storage region in the at least one storage in a manner accessible by the at least one computer; and

instructing a performance allocation module to allocate, according to the storage region allocation request, performance of at least one target module that affects data access between the at least one computer and the storage region allocated.

23.   (original)   A management program to be executed by a management computer that connects to a storage device including at least one storage for storing data to be accessed by at least one computer and an access processing module that controls data access between the at least one storage and the at least one computer, wherein the management program makes the management computer to execute:

a procedure of receiving a storage region allocation request to allocate a storage region to the at least one computer;

a procedure of instructing the storage device to allocate to the at least one computer, according to the storage region allocation request, an unallocated storage

region in the at least one storage in a manner accessible by the at least one computer; and

a procedure of instructing the storage device to allocate, according to the storage region allocation request, performance of at least one target module that affects data access between the at least one computer and the storage region allocated.

24.   (original)   A management program to be executed by a management computer that connects to a storage device including at least one storage for storing data to be accessed by at least one computer and an access processing module that controls data access between the at least one storage and the at least one computer, wherein the management program makes the a procedure of receiving a storage region allocation request to allocate management computer to execute:

a procedure of receiving a storage region allocation request to allocate a storage region to the at least one computer;

a procedure of instructing the storage device to allocate to the at least one computer, according to the storage region allocation request, an unallocated storage region in the at least one storage in a manner accessible by the at least one computer; and

a procedure of instructing the storage device to specify at least one of the plurality of target modules to allocate, according to the storage region allocation request and the actual performance values of the plurality of target modules,

performance of the at least one target module that affects data access between the at least one computer and the storage region allocated, and to allocate the performance of the at least one of the plurality of target modules specified to the at least one computer.

25.　(original)　A management program according to claim 23, wherein the management program makes the management computer to receive the storage region allocation request from a second management computer independent of the management computer.

26.　(original)　A network system comprising at least one computer, a storage device, a first management computer and a second management computer mutually connected through a network,

wherein the second management computer comprises:

a receiving module that receives a storage region allocation request from the first management computer to allocate a storage region to the at least one computer;

a control module that instructs the storage device to allocate to the at least one computer, according to the storage region allocation request, an unallocated storage region in the at least one storage in a manner accessible by the at least one computer; and

a performance allocation module that issues a performance allocation instruction to the storage device to allocate, according to the storage region

allocation request, performance of the at least one target module that affects data access between the at least one computer and the storage region allocated, and

wherein the storage device comprises:

at least one storage for storing data to be accessed by the at least one computer;

an access processing module that controls data access between the at least one storage and the at least one computer;

a management interface that receives from the second management computer a storage region allocation request to allocate the storage region and the performance allocation instruction;

a storage region allocation module that allocates according to the storage region allocation request art unallocated storage region in the at least one storage to the at least one computer in a manner accessible by the at least one computer;

a band control module that allocates to the at least one computer, according to the performance allocation instruction, performance of at least one target module that affects data access between the at least one computer and the storage region allocated.